AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A temperature control system for a semiconductor processing facility comprising:

a cooling unit for controlling the temperature of a cooling fluid; and

a plurality of remote temperature control modules in fluid communication with said cooling unit, each of said remote temperature control modules including[[;]]:

a cooling fluid circulation loop for circulating said cooling fluid through said remote temperature control module, said cooling fluid circulation loop being in fluid communication with said cooling unit;

a heat transfer fluid circulation loop for circulating a heat transfer fluid through said remote temperature control module, said heat transfer fluid being in fluid communication with ~~a~~ at least one process component of said semiconductor processing facility;

~~means for~~ an integrated heat exchanger including a portion of the cooling fluid circulation loop, a portion of the heat transfer fluid circulation loop and ~~a~~ an electrical heat source, the integrated heat exchanger exchanging heat between said cooling fluid that is circulated in said cooling fluid circulation loop and said heat transfer fluid that is circulated in said heat transfer fluid circulation loop~~s~~.

insert B1

a cooling fluid control valve in fluid communication with said cooling fluid circulation loop for controlling the circulation of said cooling fluid through said cooling fluid circulation loop; and

a controller programmed with a temperature control logic for controlling said cooling fluid control valve and controlling said current controller ~~in response to temperature set point information and temperature feedback information related to said process component~~.

2. (Currently amended) The temperature control system of claim 1 wherein each of said remote temperature control modules includes ~~a~~ the heat source in thermal communication with said heat transfer fluid for providing heat to said heat transfer fluid.

3. (Original) The temperature control system of claim 2 wherein said heat source is controlled by said temperature control logic in response to said temperature set point information and temperature feedback information related to said process component.

4. (Cancelled) The temperature control system of claim 3 wherein said heat source is integrated with said means for exchanging heat.

5. (Cancelled) The temperature control system of claim 4 wherein said means for exchanging heat includes a heat exchanger that integrates a portion of said cooling fluid circulation loop, a portion of said heat transfer fluid circulation loop, and said heat source.

6. (Original) The temperature control system of claim 1 wherein said cooling unit is physically separate from said plurality of remote temperature control modules.

7. (Original) The temperature control system of claim 6 wherein said cooling unit is located in a utility basement of said semiconductor processing facility.

8. (Original) The temperature control system of claim 7 wherein said plurality of remote temperature control modules are located in a subfloor area of said semiconductor processing facility.

9. (Original) The temperature control system of claim 7 wherein said plurality of remote temperature control modules are physically connected to process tools within said semiconductor processing facility.

10. (Currently Amended) The temperature control system of claim 1 wherein said cooling unit is set to maintain said cooling fluid at a temperature ~~that is related to the where the temperature correlates~~ correlating to a lowest ~~set point~~ temperature among all ~~of~~ said process components that are thermally influenced by said cooling fluid.

11. (Currently amended) A temperature control system for a process component of a semiconductor processing facility comprising:

~~a~~ at least one remote temperature control module, said remote temperature control module including;

a cooling fluid input for receiving cooling fluid from a cooling unit that serves multiple remote temperature control modules;

a cooling fluid output for returning cooling fluid to said cooling unit that serves multiple remote temperature control modules;

a cooling fluid circulation loop for circulating said cooling fluid through said remote temperature control module;

a heat transfer fluid input for receiving heat transfer fluid from ~~said~~ the process component;

a heat transfer fluid output for returning said heat transfer fluid to said process component;

a heat transfer fluid circulation loop for circulating said heat transfer fluid through said remote temperature control module, said heat transfer fluid being in fluid communication with said process component of said semiconductor processing facility;

~~means for exchanging~~ an integrated heat exchanger including a portion of the cooling fluid circulation loop, a portion of the heat transfer fluid circulation loop and ~~a~~ an electrical heat source, the integrated heat exchanger exchanging heat between said cooling fluid that is circulated in said cooling fluid circulation loop and said heat transfer fluid that is circulated in said heat transfer fluid circulation loop;

a cooling fluid control valve in fluid communication with said cooling fluid circulation loop for controlling the circulation of said cooling fluid through said cooling fluid circulation loop; and

a controller programmed with a temperature control logic for controlling said cooling fluid control valve ~~in response to temperature set point information and temperature feedback information related to said process component~~ and controlling said current controller.

10 12. (Currently amended) The temperature control system of claim 9 ~~11~~ wherein each of said remote temperature control modules includes ~~a~~ the heat source in thermal communication with said heat transfer fluid for providing heat to said heat transfer fluid.

11 13. (Currently amended) The temperature control system of claim 10 ~~12~~ wherein said heat source is controlled by said temperature control logic in response to ~~said~~ temperature set point information and ~~said~~ temperature feedback information related to said process component.

14. (Original) ~~The~~ temperature control system of claim 13 wherein said heat source is integrated with ~~said~~ means for exchanging heat.

15. (Cancelled) The temperature control system of claim 14 wherein said means for exchanging heat includes a heat exchanger that integrates a portion of said cooling fluid circulation loop, a portion of said heat transfer fluid circulation loop, and said heat source.

16. (Original) The temperature control system of claim 11 wherein said cooling unit is physically separate from said remote temperature control module and said multiple remote temperature control modules.

17. (Original) The temperature control system of claim 16 wherein said cooling unit is located in a utility basement of said semiconductor processing facility.

18. (Original) The temperature control system of claim 17 wherein said remote temperature control module is located in a subfloor area of said semiconductor processing facility.

19. (Original) The temperature control system of claim 17 wherein said remote temperature control module is physically connected to a process tool within said semiconductor processing facility.

20. (Currently amended) The temperature control system of claim 11 wherein said cooling unit is set to maintain said cooling fluid at a temperature ~~related to the where the temperature correlates to a~~ correlating of said at least one lowest ~~set point~~ temperature among all remote temperature control modules that are served by said cooling unit.

21. (Currently amended) A temperature control system for a process component of a semiconductor processing facility comprising:

at least one
~~a~~ remote temperature control module, said remote temperature control module including[[;]]:

a cooling fluid input for receiving cooling fluid from a physically separate cooling unit that serves multiple remote temperature control modules;

a cooling fluid output for returning cooling fluid to said cooling unit that serves multiple remote temperature control modules;

a cooling fluid circulation loop for circulating said cooling fluid through said remote temperature control module;

a heat transfer fluid input for receiving heat transfer fluid from said process component;

a heat transfer fluid output for returning said heat transfer fluid to said process component;

a heat transfer fluid circulation loop for circulating said heat transfer fluid through said remote temperature control module, said heat transfer fluid being in fluid communication with said process component of said semiconductor processing facility, wherein said cooling fluid circulation loop and said heat transfer fluid circulation loop are separate fluid distribution systems;

an electrical
~~a~~ heat source in thermal communication with said heat transfer fluid for providing heat to said heat transfer fluid;

[[a]] an integrated heat exchanger for exchanging heat between said cooling fluid that is circulated in said cooling fluid circulation loop and said heat transfer fluid that is circulated in said heat transfer fluid circulation loop where the integrated heat exchanger includes a portion of the cooling fluid circulation loop, a portion of the heat transfer fluid circulation loop and the ~~heat~~ electrical heat source;

insert B4

a cooling fluid control valve in fluid communication with said cooling fluid circulation loop for controlling the circulation of said cooling fluid through said cooling fluid circulation loop; and

a controller programmed with a temperature control logic for controlling said cooling fluid control valve and ~~said heat source in response to temperature set point information and temperature feedback information related to said process component~~.

22. (Cancelled) The temperature control system of claim 21 wherein said heat source is integrated with said heat exchanger.

18 17
23. (Original) The temperature control system of claim ~~21~~ wherein said cooling unit is located in a utility basement of said semiconductor processing facility.

19 18
24. (Original) The temperature control system of claim ~~23~~ wherein said remote temperature is control module is located in a subfloor area of said semiconductor processing facility.

20 17
25. (Currently amended) The temperature control system of claim ~~21~~ wherein said cooling unit is set to maintain said cooling fluid at a temperature ~~related to the where the temperature correlates~~ correlating to a lowest ~~set point~~ temperature of said at least one remote temperature control modules that are served by said cooling unit.